

Appn. Number 10/649,716

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**REMARKS – General**

Applicants have amended their claims to define the invention more particularly and distinctly so as to overcome the rejections and define the invention patentability over the cited references.

Claims 1 to 19 were pending prior to the amendments contained herein. The Office Action mailed on 09/11/2006 rejected claims 1-3, 10 and 11 and objected to claims 4-9 and 12-19.

All claims previously pending claims have been cancelled and new claims submitted herein.

Applicants appreciate the review and comments set out the by Examiner in the Office Action.

**Claims objected to under 37 C.F.R. 1.75(c)**

Old claims 16 and 17 were objected to as being improper multiple dependent claims. Old claims 16 and 17 were cancelled. The subject matter in these claims has been restated in the new claims 30 et seq.

**Claims Rejected Under USC 35 § 112**

The Office Action rejects original claim 11 due to a lack of an antecedent basis for the term “the reduction nozzle”. Original claim 11 has been cancelled. New claim 25 contains the phrase

*a reduction nozzle having an inlet and a discharge end, wherein said inlet of said reduction nozzle is attached to said discharge of the housing, and wherein the reduction nozzle is adapted to accelerate the flow of slurry into an adjacent reduction nozzle discharge conduit having an inlet and a discharge end, said inlet attached to the discharge end of the reduction nozzle;*

New claim 28 depending from new claim 25 contains the phrase:

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*a third pump suction intake conduit attached to the third pump suction intake port, said third pump suction intake conduit in turn attached to said reduction nozzle discharge conduit discharge end;*

Therefore Applicant submits that the S112 objection has been overcome.

**Claims Rejected Under USC 35 § 103**

**Establishing Obviousness**

In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or the references when combined) ***must teach or suggest all the claim limitations***. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991) (Reversed district court holding of obviousness). Any *prima facie* conclusion of obviousness must be factually supported, and, if not met, the applicant is under no obligation to submit evidence of nonobviousness.

The Office Action rejects Applicant's original claims 1-3, 10 and 11 as being unpatentable in light of Robertson, Ray, Steltz and Winslow. These original claims have been cancelled and new claims submitted.

**New Claim 20 is not obvious in light of Robertson, Ray, Steltz, and Winslow**

New claim 20 reads as follows:

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A trailer mounted mobile apparatus for dewatering and recovering formation sand from an oil-sand-water mixture contained in a remotely located field oil storage tank, said tank having a flanged fluid drain hole located at the bottom thereof, and a flanged fluid inlet hole located above said flanged fluid drain hole, said trailer mounted mobile apparatus towable by a truck, the trailer mounted mobile apparatus comprising:

- a. a furcated conduit adapted for connection to said tank flanged fluid drain hole, said furcated conduit having a first branch and a second branch;
- b. a high pressure water injection pipe for injecting high pressure water into the formation sand within the tank, said pipe insertable through the first branch of the furcated conduit and into the formation sand;
- c. forcing means for forcibly inserting said pipe into said formation sand;
- d. means for withdrawing said slurry from the tank by way of the second branch of the furcated conduit;
- e. means for injecting treatment chemicals into the slurry stream comprising an injection port and an injection conduit located on said second branch of the furcated conduit;
- f. means for dewatering the slurry said dewatering means located remote from the tank;
- g. means for transporting the slurry from the tank to said remote slurry dewatering means;
- h. means for recycling water separated from the slurry back into the tank for later collection and treatment; and,
- i. oil skimming means for recycling oil floating on the surface of the slurry within the remote slurry dewater means back into the tank.

Robertson fails to disclose the following elements of new claim 20:

- forcing means for forcibly inserting said pipe into said formation sand;

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- means for injection treatment chemicals into the slurry stream comprising an injection port and an injection conduit located on said second branch of the furcated conduit;
- means for recycling water separated from the slurry back into the tank for later collection and treatment; and,
- means for recycling oil separated from the slurry back into the tank.

The system disclosed by Robertson includes a tank including the pipe system (40) already permanently installed in the tank. (Figure 2 and Column 6, lines 24-28). Therefore there is no need for means to force the high pressure water pipe into the settled sand within the tank. In Robertson, one has to merely connect the high pressure water source to the already installed pipe system to create the slurry for removal. Most remote storage tanks do not have such a piping system already installed and therefore there is a need for Applicant's system having forcing means. Given that Robertson already includes a means for injecting high pressure water into sand within the tank, a person skilled in the art would not be led to Applicant's invention by Robertson. Modifying Robertson by including forcing means would not be logical and there is nothing about Robertson, Ray, Steltz or Winslow that would lead a person skilled in the art to modify the cited references or combine them to resolve the problem resolved by Applicant's invention.

The system disclosed by Robertson is concerned with removing sand settled within the storage tank and pumping the fines in a slurry form to a waiting truck. The fines and the liquid removed from the storage tank are not treated in situ or recycled. Rather, they are taken away for disposal. It is well known in the industry that material removed from the storage tank will contain a mixture of sand, water and oil. As stated by Applicant, it is no longer acceptable to authorities to dispose of the sand when it contains oil. Therefore, Applicant's invention is adapted to remove oil from the mixture and recycle recovered water from the dewatering process water back into the storage tank. Robertson takes the entire mixture away for disposal (Column 7 lines 18-36). Since it is an object of Applicant's invention to separate the oil and water from the sand in situ, Applicant's invention includes means for addition of treatment chemicals such as a floc agent to promote the separation of sand from the slurry and means to recycle separated oil back to the storage tank. These features are not disclosed by Robertson. Since Robertson does not treat the slurry in situ

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and is adapted for taking the slurry mixture away from the tank for disposal, it teaches away from the Applicant's invention and is not capable of solving the problem presented in Applicant's invention, reduction of pollution. Applicant's apparatus operates to recycle water and oil as follows:

[0064] Water that is recycled from the slurry is collected in sump (150) and transferred to reservoir (100). This water is then transferred back to the tank (10) by way of low pressure pump (134). Low pressure pump (134) discharges into conduit (138) that is ultimately connected to port (26) on tank (10). This lower pressure water maintains slurry consistency for pumping. Once the slurry has been dewatered, all the collected water will be recycled back into the tank for later collection and further treatment. In this way there is no need for the trailer (102) to have a large reservoir (100) capable of handling the entire volume of water stored in the tank.

[0065] As previously mentioned some oil will be pumped out of the tank with the slurry. This oil will be pumped into the container (174) and will naturally float to the surface of the slurry. This is depicted in Figure (10) as layer (550). The sand will settle to the bottom of the container. The volume of sand is depicted at (552) below oil layer (550) and water layer (554). Operator (556) stands on platform (532) accessible by retractable ladder (560). The operator manipulates an oil skimmer comprising a suction head (562) and a buoyant suction hose (564). The discharge of hose (564) is attached to conduit (152) and subsequently to the intake of pump (134). In this way the oil that is collected with the slurry is returned to the tank by way of port (26) for further processing. This eliminates most of the hydrocarbon contamination of the formation sand.

Applicant respectfully submits that Robertson does not render Applicant's new claim 20 novel or obvious because it fails to disclose elements of Applicant's invention, namely, those directed to forcing the high pressure pipe into the formation sand and those directed at recycling the water and oil back separated from the slurry back into the storage tank for later treatment.

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Robertson combined with Ray, Steltz or Winslow do not disclose the elements of forcing means, chemical injection and water and oil recycling back into the storage tank. Therefore, the combined references fail to teach all of the elements of claim 20 and do not render it obvious to a person skilled in the art.

New claims 21 to 35 are not rendered obvious by Robertson, Ray, Steltz or Winslow.

New claim 21 to 35 all depend from new independent claim 20 and recite additional limiting features of the various novel features disclosed in claim 20. These features are not disclosed by any of the cited art and therefore the combined cited art fails to disclose or suggest all of the elements of new claims 21 to 35.

#### Allowable Subject Matter

The Office Action has identified claims 4-9 and 12-15 as reciting allowable subject matter and allowable is rewritten to overcome the objections cited in the Office Action. The allowable subject matter of these claims have been restated in the new claims in order to overcome the objections cited.

#### Conclusion

In view of the forgoing amendments and accompanying arguments, Applicant respectfully requests allowance of his new claims 20 – 35.

If there are any matters concerning this application that could be cleared up in a telephone conversation, please contact the undersigned at (250) 418 3250.

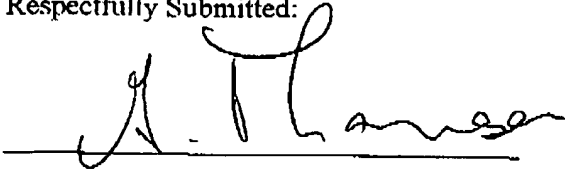
The assistance and helpful suggestions set out by the Examiner in this Office Action are greatly appreciated.

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Respectfully Submitted:

A handwritten signature in black ink, appearing to read 'G. Thomson', is written over a horizontal line.

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